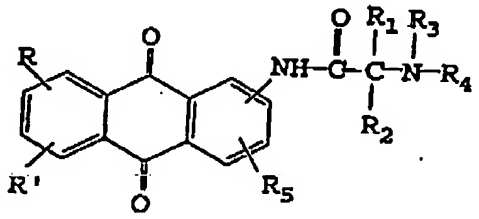
Serial No. 10/022,411

AMENDMENTS TO THE CLAIMS

Claim 1 (Original) A compound of the following formula (I):

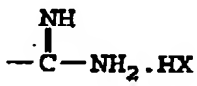


(I)

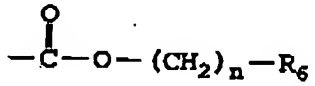
wherein:

R_1, R_2 and R_3 each independently is hydrogen, hydroxyl, amino or C_{1-6} alkyl group;

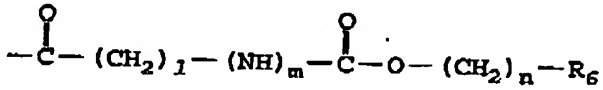
R_4 is hydrogen, C_{1-18} alkyl carbonyl, C_{1-6} alkyl group substituted by at least a functional group, said functional group is selected from the group consisting of hydroxyl, amino, carbado, carbazoyl, formyl, carbamyl, carboxyl, carbonyl, or a group of the following formula



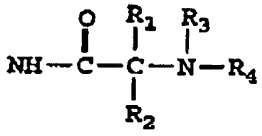
wherein X is fluoro, chloro, bromo, iodo, a group of the following formula



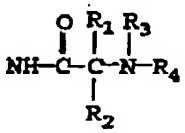
wherein n is 1, 2, or 3, R_6 is hydrogen or arylalkyl, or a group of the following formula



wherein l is 1, 2, or 3, m is 0 or 1, n and R_6 is defined as the above;
R_5 is hydrogen amino or a group of the following formula



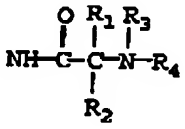
wherein R_1, R_2, R_3 and R_4 are defined as the above; and
R and R' each independently is hydrogen, hydroxyl, amino, C_{1-6} alkyl group or a group of the following formula



wherein R_1, R_2, R_3 and R_4 are defined as the above.

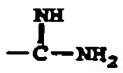
Claim 2 (Original) The compound of claim 1, wherein R_1, R_2, and R_3 each independently is hydrogen or amino group.

Claim 3 (Original) The compound of claim 1, wherein R and R' each independently is hydrogen, amino group or a group of the following formula



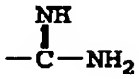
wherein R_1, R_2, and R_3 each independently is hydrogen or amino group; and R_4

is hydrogen or a group of the following formula

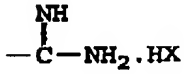


Claim 4 (Original) The compound of claim 1, wherein R_1 and R_2 is hydrogen.

Claim 5 (Original) The compound of claim 1, wherein R_4 is a group of the following formula

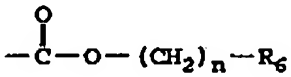


Claim 6 (Original) The compound of claim 1, wherein R_4 is a group of the following formula

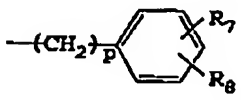


wherein X is fluoro, chloro, bromo or iodo.

Claim 7 (Original) The compound of claim 1, wherein R_4 is a group of the following formula

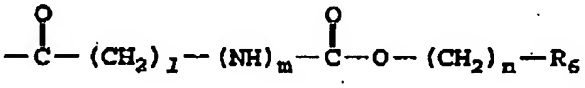


wherein n is 1, 2 or 3; R_6 is hydrogen, 1-naphthyl, 2-naphthyl or a group of the following formula

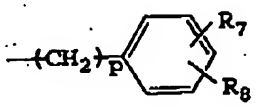


wherein p is 0, 1, 2, or 3; R_7 and R_8 each independently is hydrogen, hydroxyl, carbado, carbamyl, carboxyl, carbonyl, formyl, mercapto, methylthio, thioureido, thiocyanato, sulfoamoyl, sulfo, phosphono, fluoro, chloro, bromo, iodo, cyano, trifluoro methyl, C_{1-6} alkyl group, C_{1-6} alkoxy group, dimethyl amino, and benzyloxy, C_{1-18} alkoxycarbonyl, or arylmethoxycarbonyl, wherein said aryl group is phenyl, 2-methoxyphenyl, 4-methoxyphenyl, 2-fluorophenyl, 4-fluorophenyl, 2-chlorophenyl, 4-chlorophenyl, 2-bromophenyl, 4-bromophenyl, 1-naphthyl, 2-naphthyl, 9-fluorenyl, or pentafluorophenyl; and a pharmaceutically acceptable salt thereof.

Claim 8 (Original) The compound of claim 1, wherein R_4 is a group of the following formula



wherein l is 1, m is 0, n is 1; R_6 is a group of the following formula



wher in p is 0 or 1; R_7 and R_8 each independently is hydrogen, hydroxyl,

carbamyl, carboxyl, carbonyl, formyl, mercapto, C_{1-6} alkyl group, C_{1-6} alkoxy group, dimethyl amino, and benzyloxy, C_{1-18} alkoxycarbonyl, or arylmethoxycarbonyl, wherein said aryl group is phenyl, 2-methoxyphenyl, 4-methoxyphenyl, 2-fluorophenyl, 4-fluorophenyl, 2-chlorophenyl, 4-chlorophenyl, 2-bromophenyl, 4-bromophenyl, 1-naphthyl, 2-naphthyl, 9-fluorenyl, or pentafluorophenyl; and a pharmaceutically acceptable salt thereof.

Claim 9 (Original) The compound of claim 1, wherein said formula (I) compound is 1-benzylcarbamidoacetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 10 (Original) The compound of claim 1, wherein said formula (I) compound is 4-amino-1-guanido acetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 11 (Original) The compound of claim 1, wherein said formula (I) compound is 5-amino-1-guanido acetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 12 (Original) The compound of claim 1, wherein said formula (I) compound is 2-guanidinoacetamido anthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 13 (Original) The compound of claim 1, wherein said formula (I) compound is 4-amino-1-benzyl carbamidoacetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 14 (Original) The compound of claim 1, wherein said formula (I) compound is 1-amino-2-guanidoacetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 15 (Original) The compound of claim 1, wherein said formula (I) compound is 6-amino-2-guanido acetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 16 (Original) The compound of claim 1, wherein said formula (I) compound is 2,6-di(guanidino acetamido)anthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 17 (Original) The compound of claim 1, wherein said formula (I) compound is 2-benzyl carbamidoacetamidoanthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 18 (Original) The compound of claim 1, wherein said formula (I) compound is 1,2-di(guanidino acetamido)anthraquinone; and a pharmaceutically acceptable salt thereof.

Claim 19 (Original) A pharmaceutical composition for inhibiting the activities of cancer cells , which comprising an effective amount of formula (I) compound as described in claim 1, and a pharmaceutically acceptable carrier.

Claim 20 (Original) The pharmaceutical composition of claim 19, which is used for curing lung cancer, leukemia or brain cancer.

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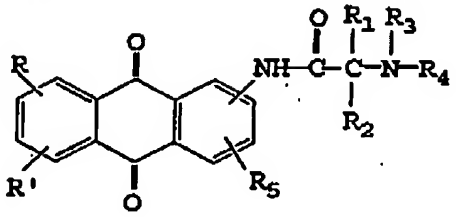
Claim 21 (Original) A pharmaceutical composition with anti-virus activity, which comprising an effective amount of formula (I) compound as described in claim 1, and one or more pharmaceutically acceptable carriers.

Claim 22 (Currently Amended) The pharmaceutical composition of claim 21, which issued for inhibiting ~~curing~~ AIDS virus.

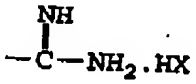
Claim 23 (Original) A method for preparing a compound of the following formula (I),



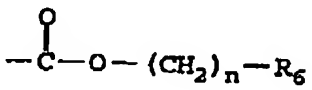
wherein:

R_1, R_2 and R_3 each independently is hydrogen, hydroxyl, amino or C_{1-6} alkyl group;

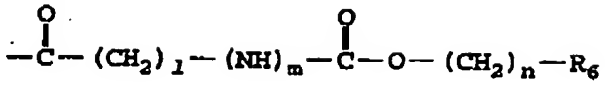
R_4 is hydrogen, C_{1-18} alkyl carbonyl, C_{1-6} alkyl group substituted by at least a functional group, said functional group is selected from the group consisting of hydroxyl, amino, carbado, carbazoyl, formyl, carbamyl, carboxyl, carbonyl, or a group of the following formula



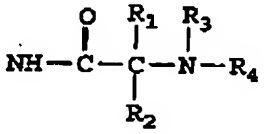
wherein X is fluoro, chloro, bromo, iodo, a group of the following formula



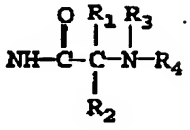
wherein n is 1, 2, or 3, R_6 is hydrogen or arylalkyl, or a group of the following formula



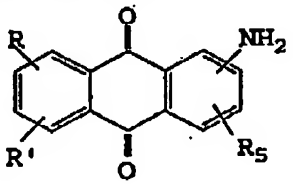
wherein l is 1, 2, or 3, m is 0 or 1, n and R_6 are defined as the above;
R_5 is hydrogen amino or a group of the following formula



wherein R_1, R_2, R_3 and R_4 are defined as the above; and
R and R' each independently is hydrogen, hydroxyl, amino, C_{1-8} alkyl group or a group of the following formula

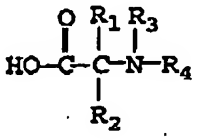


wherein R_1, R_2, R_3 and R_4 are defined as the above, which comprising:
a compound of the following formula (II)

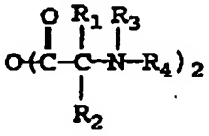


(II)

wherein n, R and R' are defined as the above with a compound of the following formula (III) or formula (IV)



(III)



(IV)

wherein R_1, R_2, R_3 and R_4 are defined as the above, in the presence of a coupling agent to proceed a condensation reaction.

Claim 24 (Original) The method of claim 23, wherein said coupling agent is N,N'-diisopropyl-carbodiimide, N,N'-dicyclohexyl carbodiimide, ethyl chloroformate, carbony diimidazole or ECDI in a solvent.